

# Our Place in the Galaxy

Study*ladder*





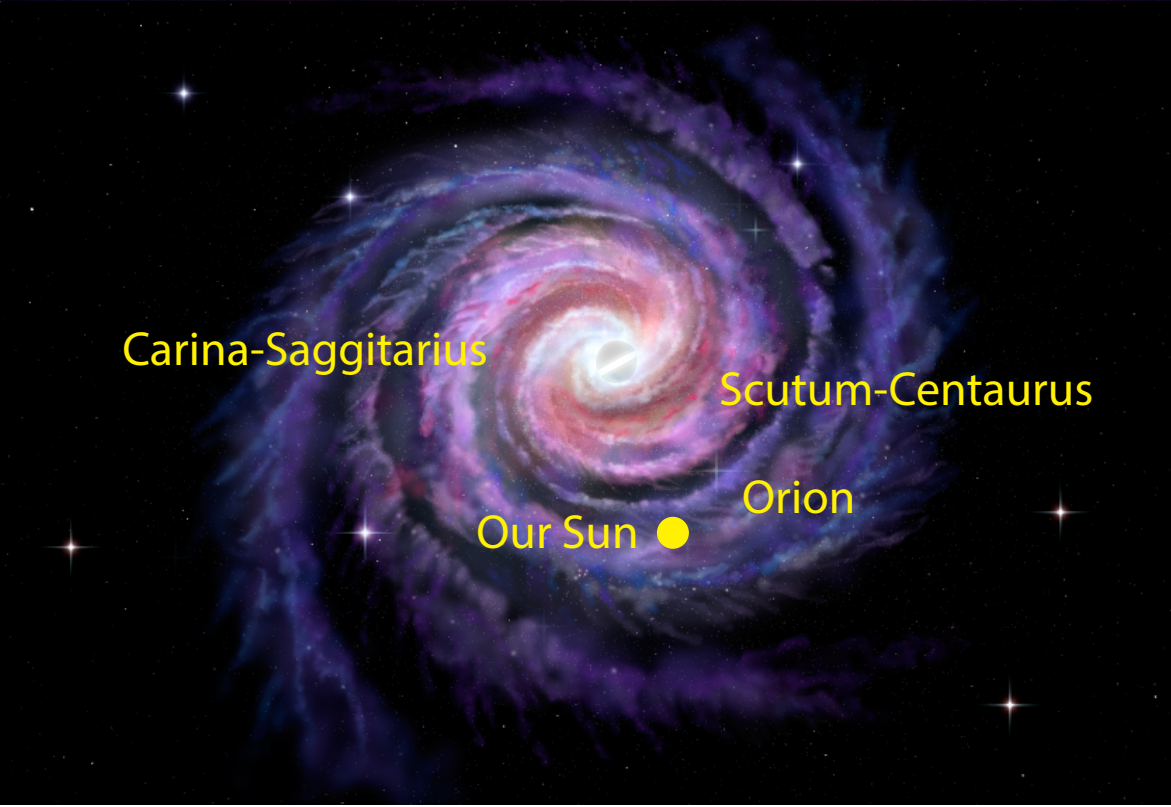
Our solar system is situated in a galaxy called 'The Milky Way'. Our view of the galaxy from Earth is a band of thickly massed stars across our sky.

From a neighbouring galaxy in outer space, The Milky Way would look like a spiral of stars swirling around a cluster of central stars. Astronomers believe that most galaxies have a black hole at their centre. There is evidence of a super-massive black hole at the centre of the Milky Way.

The Milky Way has two Major arms: the Scutum-Centaurus Arm and the Carina-Sagittarius Arm. We are located on a minor arm called the Orion Arm. Our Sun is about 28 000 light years from the centre of the galaxy and our nearest neighbouring star cluster is Alpha Centauri, which is about 4.3 light years away from us.

Of course, it is impossible to know exactly what the Milky Way looks like as it is so big that we cannot send a probe to photograph it in detail. We only have our view from within the galaxy to work from.

It is amazing to think that The Milky Way is just one of countless other galaxies spinning around in a universe too big for us to imagine!



# The Size of the Universe

The distances between objects in the galaxy are so far apart that using kilometres as a unit of measurement doesn't work well. So we measure very great distances in light years instead.

Light travels at 300 000 km/sec! So the distance light can travel in a year is very great. This distance is 9 460 528 400 000 km.

The distance from the Earth to the Sun is about 150 000 000 km. It takes just 8 minutes 20 seconds for the Sun's light to reach the Earth. Astronomers call this distance an Astronomical Unit (AU).

The distance from the Sun to Neptune, our furthest planet, is about 30 AU. The distance to the outer reaches of the solar system is estimated to be around 100 000 AU. (1.87 light years away)

The estimated distance across our galaxy, The Milky Way, is about 100 000 light years.

Scientists believe there are a countless number of galaxies in the universe. Considering how large our galaxy is, the size of the universe is incredibly large!

